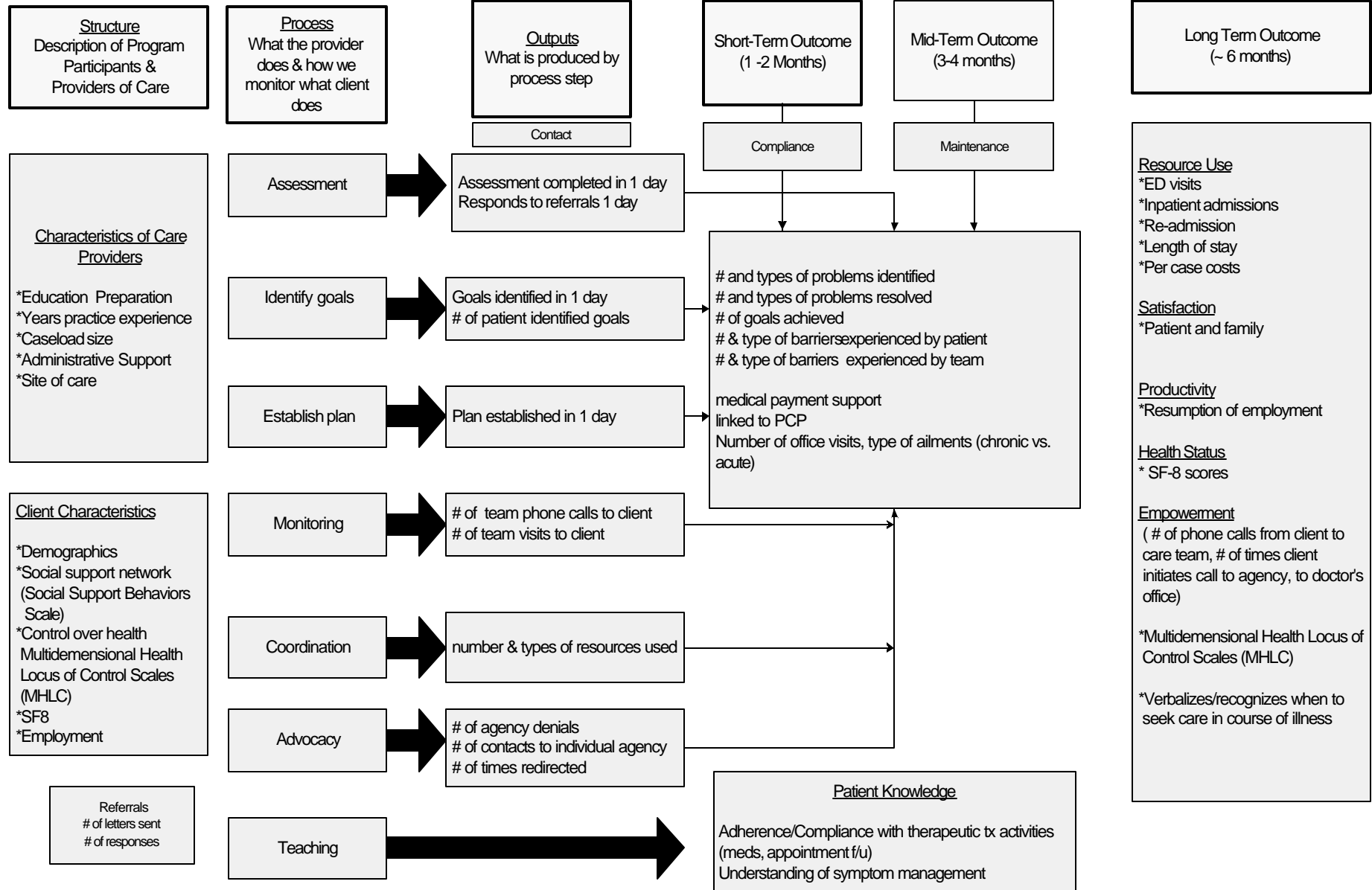# Logic Model Methodology Applied to a Community-Based Case Management Program Evaluation

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# Program Characteristics

- Four (4) RN and social worker case management teams operate out of local emergency departments

- Teams work with low-income, uninsured people who are high utilizers of the ED for non-urgent health problems

- Qualifying patients receive a brochure through the mail inviting them to participate in the program

- Voluntary, no-charge program

- Case management teams: help participants apply for benefits, provide health education, facilitate connections to clinics, and they provide follow-up support

Case Management Logic Model for Evaluation

**Structure**
Description of Program Participants & Providers of Care

**Process**
What the provider does & how we monitor what client does

**Outputs**
What is produced by process step

Contact

**Short-Term Outcome**
(1 -2 Months)

Compliance

**Mid-Term Outcome**
(3-4 months)

Maintenance

**Long Term Outcome**
(~ 6 months)

Characteristics of Care Providers

*Education Preparation
*Years practice experience
*Caseload size
*Administrative Support
*Site of care

Client Characteristics

*Demographics
*Social support network (Social Support Behaviors Scale)
*Control over health Multidemensional Health Locus of Control Scales (MHLC)
*SF8
*Employment

Referrals
# of letters sent
# of responses

Assessment → Assessment completed in 1 day
Responds to referrals 1 day

Identify goals → Goals identified in 1 day
# of patient identified goals

Establish plan → Plan established in 1 day

Monitoring → # of team phone calls to client
# of team visits to client

Coordination → number & types of resources used

Advocacy → # of agency denials
# of contacts to individual agency
# of times redirected

Teaching →

# and types of problems identified
# and types of problems resolved
# of goals achieved
# & type of barriersexperienced by patient
# & type of barriers experienced by team

medical payment support
linked to PCP
Number of office visits, type of ailments (chronic vs. acute)

**Patient Knowledge**

Adherence/Compliance with therapeutic tx activities (meds, appointment f/u)
Understanding of symptom management

Resource Use
*ED visits
*Inpatient admissions
*Re-admission
*Length of stay
*Per case costs

Satisfaction
*Patient and family

Productivity
*Resumption of employment

Health Status
* SF-8 scores

Empowerment
( # of phone calls from client to care team, # of times client initiates call to agency, to doctor's office)

*Multidemensional Health Locus of Control Scales (MHLC)

*Verbalizes/recognizes when to seek care in course of illness

## Case Management
## Logic Model for Evaluation
## Part 1

**Structure**
Description of Program,
Participants,
Providers of Care

**Process**
What providers do,
how we monitor
what clients do

**Outputs**
What is produced
by process step

Contact

Care Providers
Characteristics

*Education preparation
*Years practice
experience
*Caseload size
*Administrative support
*Site of care

Client Characteristics

*Demographics
*SF-8
*Employment
*Social support network
 (Social Support Behaviors Scale)
*Control over health
 (Multidimensional Health Locus of
Control Scales)

| Assessment | → | *Assessment completed (1 day)<br>*Responds to referrals (1 day) |

| Identify goals | → | *Goals identified (1 day)<br>*# of patient identified goals |

| Establish plan | → | *Plan established (1 day) |

| Monitoring | → | *# of  team phone calls to client<br>*# of team visits to client |

| Coordination | → | * # and types of resources used |

| Advocacy | → | *# of agency denials<br>*# of contacts to individual agency<br>*# of times redirected |

Teaching

## Case Management
## Logic Model for Evaluation
## Part 2

| Short-Term Outcome | Mid-Term Outcome | Long Term Outcome |
|---|---|---|
| (1 -2 Months) | (3-4 months) | (~ 6 months) |

Compliance

Maintenance

*# and types of problems identified
*# and types of problems resolved
*# of goals achieved
*# and type of barriers experienced by patient
*# and type of barriers experienced by team

*Medical payment support
*Linked to PCP
*Number of office visits, type of ailments
(chronic vs. acute)

Resource Use
*ED visits
*Inpatient admissions
*Re-admission
*Length of stay
*Per case costs

Satisfaction
*Patient and family

Productivity
*Resumption of employment

Health Status
* SF-8 scores

Empowerment
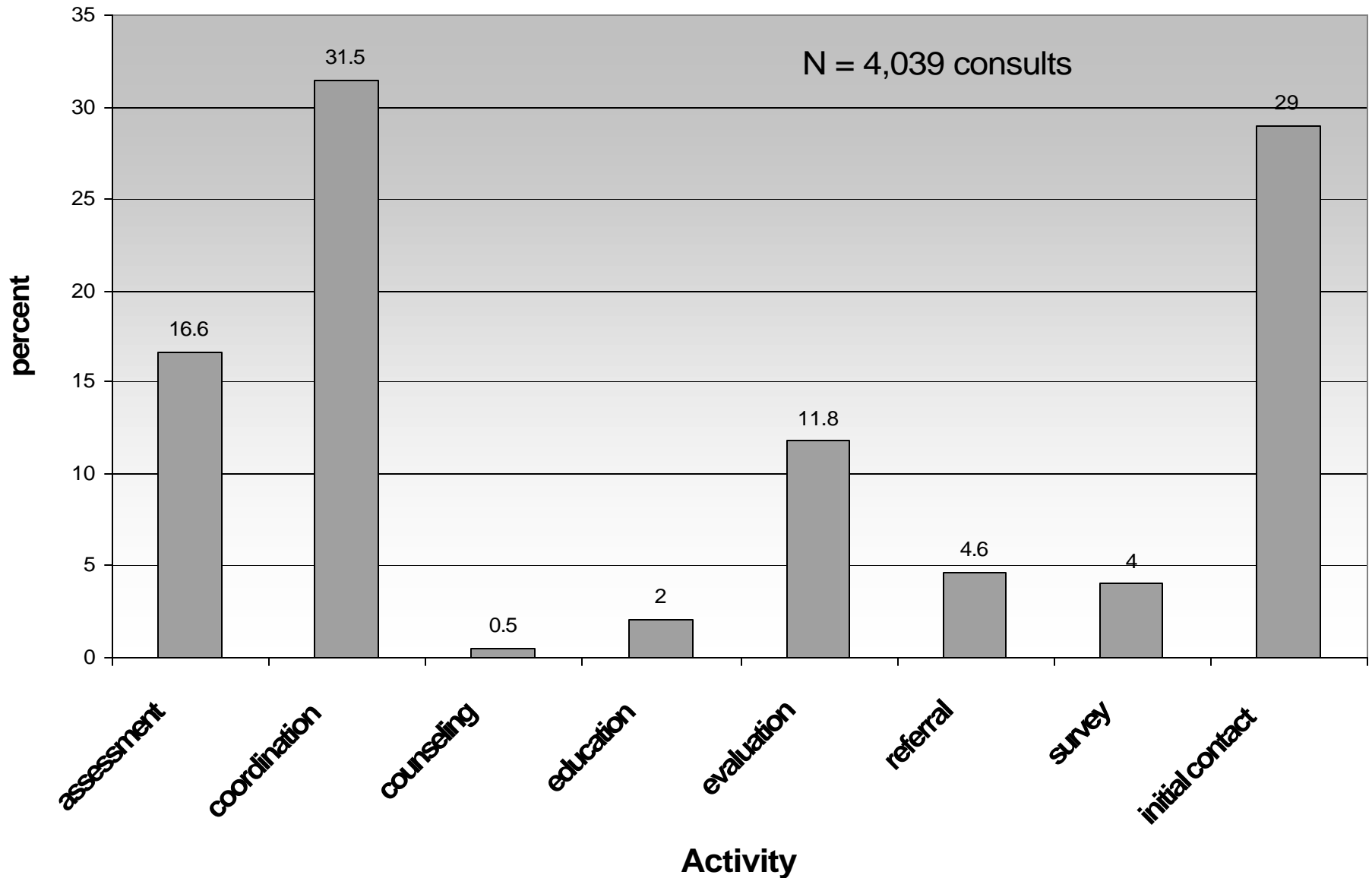*# of phone calls from client to care team

*# of times client initiates call to agency, to doctor's office

*Multidimensional Health Locus of Control Scales

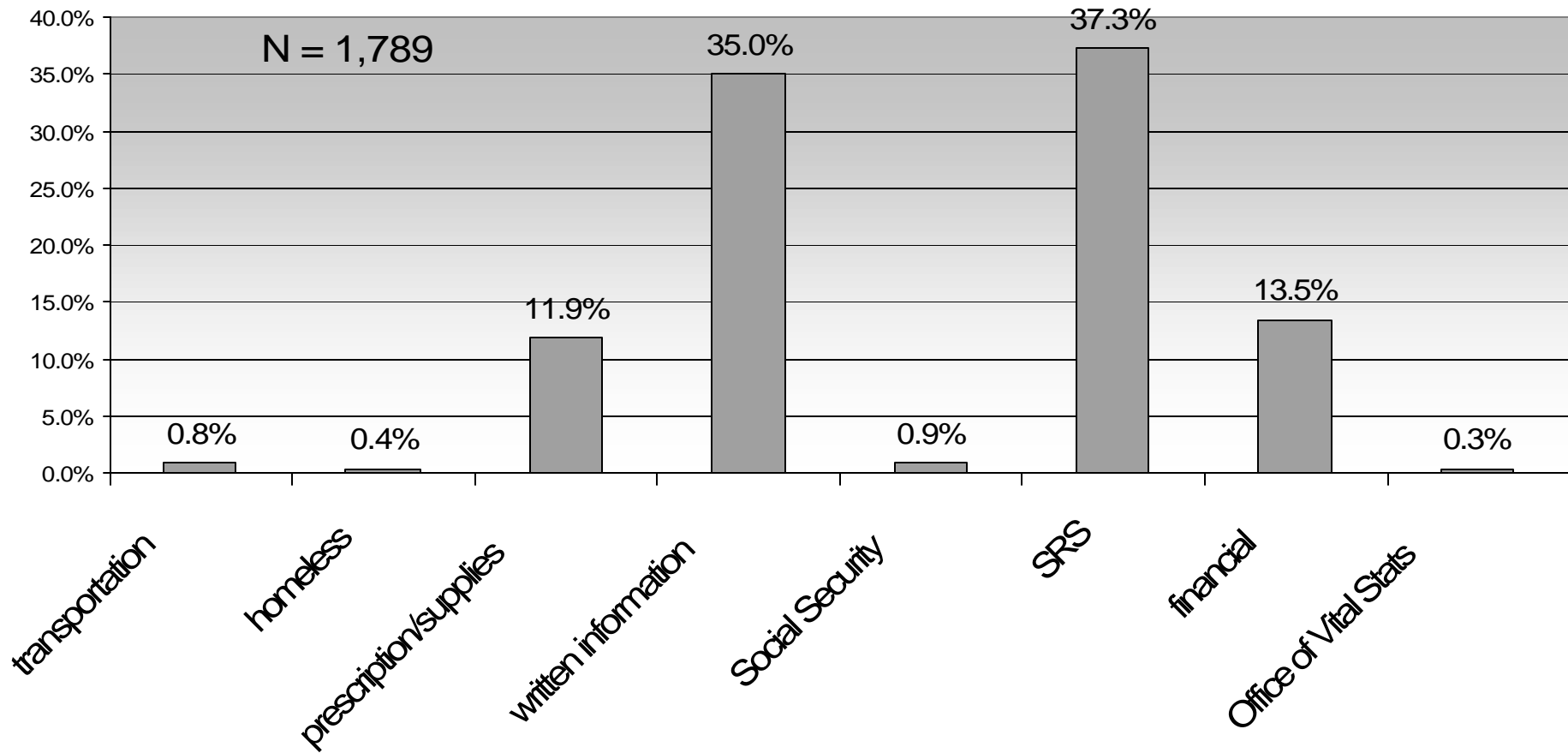*Verbalizes/recognizes when to seek care in course of illness

Patient Knowledge

*Adherence/compliance with therapeutic treatment activities (meds, appointment follow-up)

*Understanding of symptom management

# Consultation Activity by Type
# December 2001 - August 2003



Bar chart of consultation activity by type (percent). N = 4,039 consults.

| Activity | percent |
|---|---|
| assessment | 16.6 |
| coordination | 31.5 |
| counseling | 0.5 |
| education | 2 |
| evaluation | 11.8 |
| referral | 4.6 |
| survey | 4 |
| initial contact | 29 |

# Social Service Referrals
# December 2001 - August 2003



N = 1,789

| Category | Percentage |
|---|---|
| transportation | 0.8% |
| homeless | 0.4% |
| prescription/supplies | 11.9% |
| written information | 35.0% |
| Social Security | 0.9% |
| SRS | 37.3% |
| financial | 13.5% |
| Office of Vital Stats | 0.3% |

# Key Service Output Indicators per Client December 2001 – August 2003

| Indicator | Mean (SD) | Median |
|---|:---:|:---:|
| Number of Contacts (N=728) | 12.2 (11.1) | 9 |
| Number Days Open (N=345) | 192.2 (142.8) | 165 |
| Number of Follow-Ups (N=215) | 3.1 (1.1) | 3.0 |
| Number of Follow-Ups Completed (N=607) | 2.3 (1.0) | 2.0 |
| Number of Referrals (N=712) | 3.0 (2.4) | 2 |
| Number of Verified Referrals (N=602) | 2.4 (1.8) | 2 |

# SF-8 Physical Functioning

## by Perceived Level of Social Support
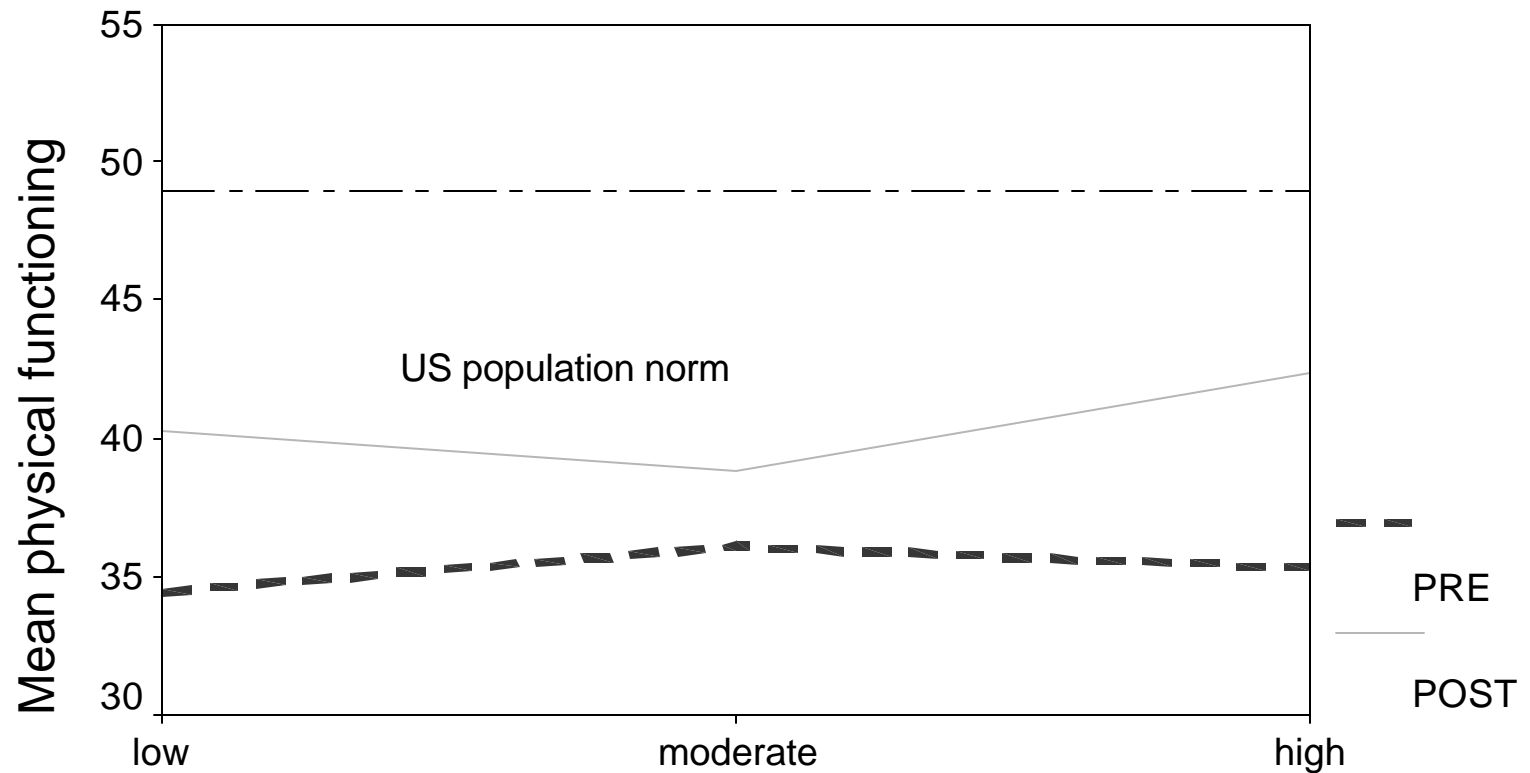


Social Support scale

N = 101

Emergency Department Visits

by Perceived Level of Social Support

Mean number of ED visits

low          moderate          high

Pre Intervention
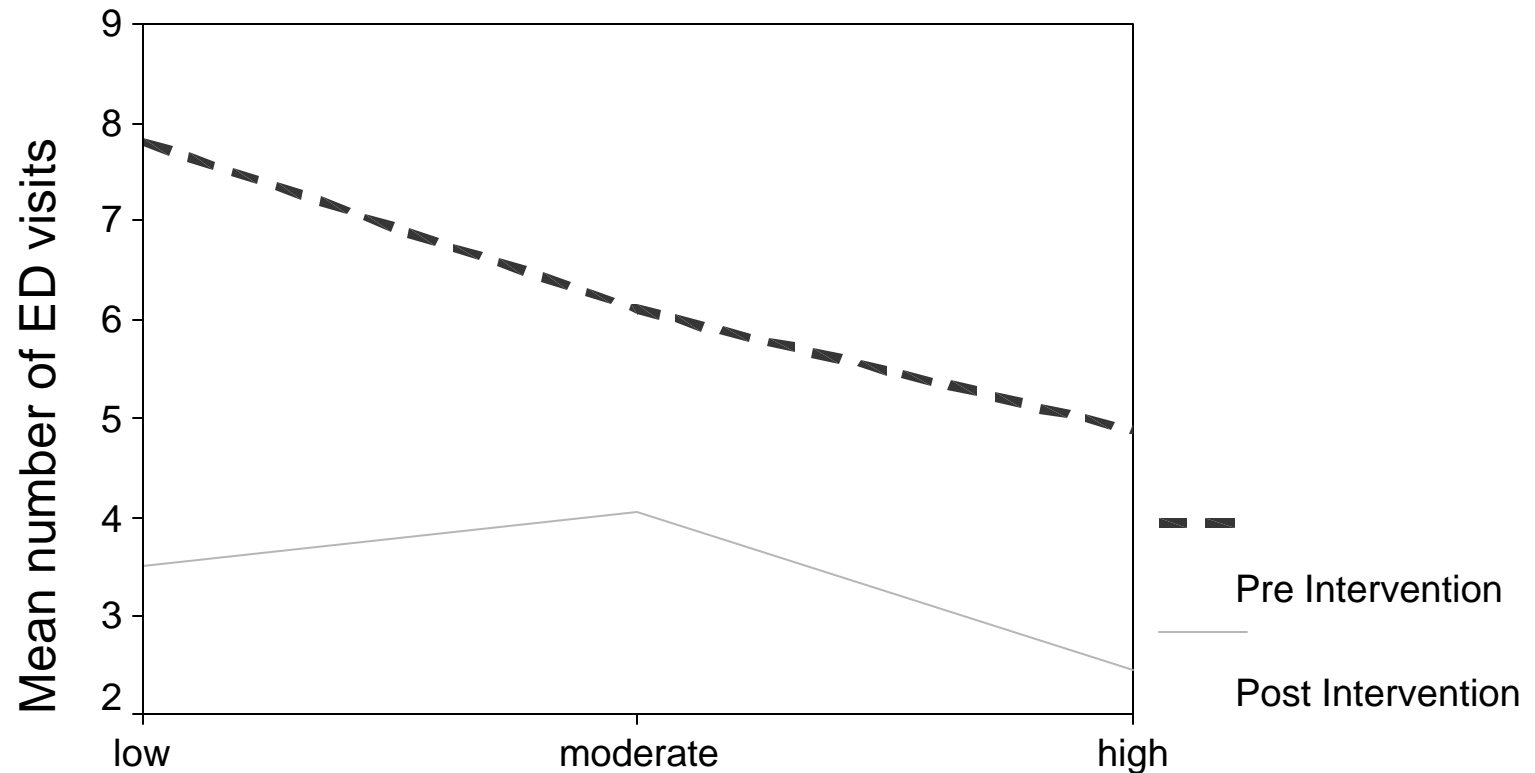
Post Intervention

Social Support Scale

N = 360

# Changes in Emergency Department Use
# Dec 2001-Feb 2003

- ED use reduced by 62%

- Estimated charges pre-intervention
  - $2,478,360

- Estimated charges post-intervention
  - $927,960

- Estimated charge avoidance
  - **$1,550,400**

# Logic Model Conclusions

- Adds clarity and structure to evaluation design

- Is intuitive

- Applicable to any setting because it is process driven

- Helps staff to understand the impact of their contribution to a service process and how to quantify that impact

- Helps create a common language among different disciplines involved in providing service

- Involves front-line staff from the beginning